[0057] **CLAIMS**

We claim:

1. A gas distribution showerhead assembly for use within a semiconductor processing chamber, including:

an electrode having a plurality of openings therethrough;

a gas distribution plate attached to a first, lower major surface of said electrode, wherein said gas distribution plate includes a plurality of through-holes for delivering processing gases into said semiconductor processing chamber; and

a removable insert which fits into an opening in said electrode through which gas flows, wherein spacing between surfaces of said removable insert and surfaces of said electrode is adequate to permit gas flow, but inadequate for plasma ignition within the opening.

2. A gas distribution showerhead assembly in accordance with Claim 1, wherein a gap between a surface of said removable insert and a surface of said electrode is 0.020 inch or less.

3. A gas distribution showerhead assembly in accordance with Claim 2, wherein a gap between a surface of said removable insert and a surface of said electrode is within the range of about 0.010 inch to about 0.015 inch.

4. A gas distribution showerhead assembly in accordance with Claim 1, wherein said removable insert comprises a removable pin plate including a plurality of pins, wherein said removable pin plate is disposed over a second, upper surface of said electrode in a manner such that said plurality of pins fits within said plurality of openings within said electrode.

5. A gas distribution showerhead assembly in accordance with Claim 4, wherein a gap between an exterior surface of a pin and a surface of an opening in said electrode into which said pin fits is 0.020 inch or less.

6. The gas distribution showerhead assembly of Claim 5, wherein a gap between an exterior surface of a pin and a surface of an opening in said electrode into which said pin fits is within the range of about 0.010 inch to about 0.015 inch.

7. A gas distribution showerhead assembly in accordance with Claim 1, wherein said electrode is formed from a material selected from the group consisting of aluminum, ceramic, Si-Si carbide, and graphite converted to silicon carbide.

8. A gas distribution showerhead assembly in accordance with Claim 7, wherein said electrode is formed from anodized aluminum.

9. A gas distribution showerhead assembly in accordance with Claim 1, wherein said removable insert is formed from a material selected from the group consisting of aluminum, ceramic, Si-Si carbide, and graphite converted to silicon carbide.

10. A gas distribution showerhead assembly in accordance with Claim 9, wherein said removable insert is formed from anodized aluminum.

11. A gas distribution showerhead assembly in accordance with Claim 1, wherein said gas distribution plate is formed from a material selected from the group consisting of silicon carbide, yttrium oxide, anodized aluminum, ceramic, quartz, and silicon.

12. A gas distribution showerhead assembly in accordance with Claim 11, wherein said gas distribution plate is formed from silicon carbide.

13. A gas distribution showerhead assembly in accordance with Claim 1, wherein said electrode is formed from aluminum, wherein said gas distribution plate is formed from silicon carbide, and wherein said electrode and said gas distribution plate are bonded together.

14. A gas distribution showerhead assembly in accordance with Claim 13, wherein said electrode and said gas distribution plate are bonded together using a silicone-based adhesive.

15. A gas distribution showerhead assembly in accordance with Claim 1, wherein said through-holes in said gas distribution plate are crescent-shaped.

16. A gas distribution showerhead assembly in accordance with Claim 15, wherein spacing between walls of said crescent is adequate to permit gas flow, but inadequate for plasma ignition within the opening.

17. A gas distribution showerhead assembly in accordance with Claim 16, wherein spacing between walls of said crescent is 0.020 inch or less.

18. A gas distribution showerhead assembly in accordance with Claim 17, wherein spacing between walls of said crescent is within the range of about 0.010 inch to about 0.015 inch.

19. A gas distribution showerhead assembly in accordance with Claim 1, wherein said gas distribution showerhead assembly is adapted for use in a semiconductor processing chamber selected from the group consisting of an etch chamber and a chemical vapor deposition (CVD) chamber.